

CNIC Conference 2024

Understanding immunity in cardiovascular disease

Program and list of posters

Madrid - November 13 - 15, 2024

www.cnic-conference.com

Centro Nacional de Investigaciones Cardiovasculares (CNIC)

Melchor Fernández Almagro, 3
28029 Madrid, Spain

Organizers



Almudena Ramiro
CNIC



Andrés Hidalgo
University of Yale / CNIC



David Sancho
CNIC



Pilar Martín
CNIC



Klaus Ley
Medical College of Georgia
at Augusta University

NOVEMBER 13, 2024

14:00 - 14:10 Opening by CNIC Conference Organizers

Regulation of the immune response in heart repair

Chairs: **Klaus Ley & Benedetta Izzi**

- 14:10 - 14:50 **Cardiac fibroblasts in homeostasis and inflammation**
Ludewig Burkhard, University Hospital Zürich (Switzerland)
- 14:50 - 15:30 **Expanding the cardio-immunology toolkit**
Gustavo Ramos, University Hospital Würzburg (Germany)
- 15:30 - 15:45 *Short talk* **A macrophage-myofibroblast cell circuit defines cold and hot fibrosis in clinically distinct cardiac pathologies.**
Shoval Miyara, Weizmann Institute of Science (Israel)
- 15:45 - 16:00 *Short talk* **Fgr kinase loss is cardioprotective against pressure overload-induced hypertrophy in mice by inhibition of the inflammatory response.**
Marta Pérez-Hernández, CNIC (Spain)

Coffee Break and Poster Exhibition (16:00 - 17:00)

Novel mechanisms of inflammatory cardiomyopathies

Chairs: **Pilar Martín & Fidel Lolo**

- 17:00 - 17:40 **Recent advances in myocarditis**
Delisa Fairweather, Mayo Clinic (USA)
- 17:40 - 18:20 **Immune checkpoints and the heart**
Javid Moslehi, University of California San Francisco (USA)
- 18:20 - 19:00 **cMet+ T cells define cardiac autoimmunity**
Federica Marelli-Berg, Queen Mary University London (UK)

NOVEMBER 14, 2024

Immune responses in atherosclerosis

Chairs: **Almudena Ramiro & Alberto del Monte**

- 08:30 - 09:10 **Antigen specific T-cell interactions in atherosclerosis**
Bram Sluetter, Leiden University (The Netherlands)
- 09:10 - 09:50 **Sex differences in cardiovascular inflammation and disease manifestation**
Sabine Steffens, LMU München (Germany)
- 09:50 - 10:05 *Short talk* **Microbially produced imidazole propionate as a new player in atherosclerosis.**
Annalaura Mastrangelo, CNIC (Spain)

Coffee Break and Poster Exhibition (10:05 - 10:30)

10:30 - 11:10 **The functional role of natural IgM antibodies in atherosclerosis**

Christoph Binder, Wien University (Austria)

11:10 - 11:50 **Impact of low-dose IL-2 on the immune landscape in patients with ischemic heart disease**

Ziad Mallat, Cambridge Cardiovascular (UK)

Lunch and Poster Exhibition (12:00 - 13:00)

Autoimmunity in cardiac disease

Chairs: **David Sancho & Gillian Dunphy**

13:00 - 13:40 **Autoimmune myocarditis: from diagnosis to personalised treatment, a 2024 update**

Alida Caforio, Padua University (Italy)

13:40 - 14:20 **T cells in Heart Failure**

Marinos Kallikourdis, Humanitas University (Italy)

14:20 - 15:00 **Autoimmune mechanisms in ischaemic heart disease**

Susanne Sattler, Imperial College London (UK)

15:00 - 15:15 Short talk **HDL-associated phosphatidylserine modulates the myeloid compartment and protects from atherosclerosis**

Aurora Bernal, CNIC (Spain)

15:15 - 15:30 Short talk **CD69-deficiency confers susceptibility to develop anti-PD1-induced myocarditis**

Enrique Ortega-Sollero, CNIC (Spain)

15:30 - 15:45 Short talk **The Inflammatory spectrum in Myocarditis**

Cristina Gil-Cruz, Cantonal Hospital St. Gallen (Switzerland)

Group Photo, Coffee Break and Poster Exhibition (15:45 - 17:00)

Immune cell-cell interactions in cardiovascular disease

Chairs: **Andrés Hidalgo & Miguel Ángel Del Pozo**

17:00 - 17:40 **New concepts of neutrophil maturation – a matter of location**

Oliver Soehnlein, Munster University (Germany)

17:40 - 18:20 **Chromatin Mechanisms of Immune-Fibroblast Crosstalk in Heart Failure**

Michael Alexanian, Gladstone Institutes, San Francisco (USA)

18:20 - 19:00 **Understanding Macrophage Biology to help Immuno-Engineer Human Tissues**

Slava Epelman, Toronto University (Canada)

19:00 - 19:15 Short talk **Cardiac fibroblasts regulate myocardial inflammation**

Christian Perez-Shibayama, Cantonal Hospital St. Gallen (Switzerland)

19:15 - 19:30 Short talk **Neutrophils promote MI-associated ventricular arrhythmia**

Jana Grune, Charité - University Medicine Berlin (Germany)

NOVEMBER 15, 2024

Single cell immunoprofiling of cardiovascular disease

Chairs: **Oliver Soehnlein & José Javier Fuster**

- 08:30 - 09:10 **The Evolving Landscape of Atherosclerosis in the COVID-19 Era**
Chiara Gianarelli, New York University (USA)
- 09:10 - 09:50 **Blood T cell receptor repertoire studies: towards biomarker discovery in autoimmune and inflammatory diseases.**
Encarnita Mariotti-Ferrandiz, Sorbonne University (France)
- 09:50 - 10:05 Short talk **Leveraging GWAS signals to identify atherosclerotic cardiovascular disease mechanisms**
Yaw Asare, Institute for Stroke and Dementia Research (Germany)

Coffee Break and Poster Exhibition (10:05 - 10:40)

- 10:40 - 10:55 Short talk **Immunotherapy for atrial fibrillation using an antibody-siRNA conjugate**
Noor Momin, University of Pennsylvania (USA)
- 10:55 - 11:10 Short talk **Influence of infarcted myocardial substrate and regional changes in cardiac resident macrophages and fibroblasts on atrial fibrillation maintenance**
Ana Simón, CNIC (Spain)
- 11:10 - 11:50 **Breakdown of tolerance to self in atherosclerosis**
Klaus Ley, Medical College of Georgia at Augusta University (USA)

Closing by CNIC Conference Organizers (11:50 - 12:00)

LIST OF POSTERS

1. Blázquez-Carballo, Ana Reyes

Institute of Parasitology and Biomedicine Lopez-Neyra – CSIC (Spain)

Mesenchymal stem cells expressing anti-inflammatory and anti-fibrotic neuropeptides: a new advanced therapy for autoimmune myocarditis

2. Cerro, Isabel

IIS-Fundación Jiménez Díaz (Spain)

Polymeric immunoglobulin receptor deficiency decreases atherosclerosis by modulating macrophage inflammatory responses

3. Chevillard, Christophe

INSERM (France)

Rare Pathogenic Variants in Mitochondrial and Inflammation-Associated Genes Lead to Inflammatory Cardiomyopathy in Chagas Disease

4. Clemente-Casares, Xavier

University of Alberta (Canada)

Neutrophil-derived Activin A in Cancer-Mediated Cardio-skeletal Myopathy

5. Cochain, Clement

Paris Cardiovascular Research Center (France)

TREM2 drives accumulation of profibrotic monocyte-derived macrophages in the infarcted myocardium

6. Cunha-Neto, Edecio

University of São Paulo (Brazil)

Genetics and cytokine-induced mitochondrial dysfunction: a new paradigm and therapeutic target in Chagas disease cardiomyopathy and other inflammatory heart conditions

7. De La Cruz, Alicia

Linköping University (Sweden)

Human-induced pluripotent stem cell-derived cardiomyocytes to study PUFA analogues as a potential treatment of long QT syndrome

8. De Prado, Lucía

CNIO (Spain)

Unexpected atheroprotection driven by RagC-mTORC1 activation in macrophages

9. Espinosa, María

Hospital Universitario de Getafe (Spain)

Inflammatory burden in myocardial infarction with and without obstructive coronary arteries

10. Fantini, Francesca

University of Milan (Italy)

Modulation of mitochondrial dynamism in Kupffer Cells impacts systemic metabolism

11. Galán, Miguel

CNIC (Spain)

Mitochondrial transcription factor A deficiency in macrophages increases susceptibility to anthracycline induced cardiotoxicity

12. García, Álvaro

CNIC (Spain)

Phosphoregulated caveolin-1: role in flow-mediated arterial wall composition and remodeling in atherogenesis

13. Gomes, Rita

i3S (Portugal)

Development of a multifunctional patch with anti-inflammatory properties for myocardial infarction

14. Gómez, Almudena

Universidad Complutense de Madrid (Spain)

Protective role of miR-149-5p in atherosclerosis progression by modulating NF- κ B pathway

15. Gonzalez-Granado, José María

Universidad Complutense de Madrid (Spain)

Lamin A/C Deficiency in Dendritic Cells Impairs Th1 and CD8+ T Cell Responses and Modulates NFκB Signaling

16. Hearps, Anna

Burnet Institute (Australia)

Transcriptomic changes associated with atherosclerosis-promoting monocyte activity in people with HIV on suppressive antiretroviral therapy

17. Jäschke, Lara

Charité - University Medicine Berlin (Germany)

Myeloid cells in HFpEF-associated right ventricular dysfunction

18. Lewis, Andrew

University of Oxford (UK)

Non-invasive cardiovascular immune cell imaging using hyperpolarized magnetic resonance

19. Maroli, Giovanni

Justus Liebig University of Giessen (Germany)

Foxo3 is required for normal cardiac immune cell composition and protects from maladaptive RV remodeling upon pressure overload and pulmonary hypertension

20. Márquez, Cristina

IIS-Fundación Jiménez Díaz (Spain)

Immunoglobulin a as a biomarker of human abdominal aortic aneurysms revealed by topologically-resolved proteomics

21. Matiz, Luismaria

Center for Integrative Biology (France)

Immune cell profile and dynamics during zebrafish cardiac valve regeneration

22. Moita, Luis

University of Lisboa (Portugal)

Clinical Implications of Surgical Stress-Induced Metabolic Changes

23. Picatoste, Belén

Universidad Complutense de Madrid (Spain)

Role of polymeric Immunoglobulin receptor in glucose metabolism

24. Raposo, Irene

CNIC (Spain)

Is ALDH4A1 atherosclerosis antigen a potential therapeutic target?

25. Rivero, Paloma

Hospital Clinic Barcelona (Spain)

ZEB1 inhibits lipid accumulation and promotes lipophagy in macrophages

26. Rodriguez-Ronchel, Ana

CNIC (Spain)

Single-cell analysis of the antibody response in atherosclerosis

27. Silva, Elsa

i3S (Portugal)

Looking at the Heart from the outside to improve HFpEF

28. Terri, Michaela

CNIC (Spain)

Caveolin-1: a Key Modulator of Mechanotransduction and ECM Remodeling in Atherosclerosis

29. Tumani, Mikail

University of Heidelberg (Germany)

Cardiomyocyte but not endothelial expression of PD-L1 is required to protect from Immune-Checkpoint-Inhibitor-Associated Myocarditis (ICIM)